

UNDERSTANDING CONCEPTS OF 'DEVELOPMENT' AND LINKAGES TO DEPLOYMENT STRATEGIES IN ICT4D IN INDIA

Renee Kuriyan* and Jennifer Bussell†

*University of California, Berkeley
Energy and Resources Group
310 Barrows Hall
Berkeley, CA 94720
Email: rkuriyan@berkeley.edu

Microsoft Research India
Microsoft Research Lab India Private Limited
Prestige Maximus, 196/36
2nd Main Sadashivnagar, Bangalore -560 080 India

†University of California, Berkeley.
Department of Political Science
210 Barrows Hall
Berkeley, CA 94720
Email: jbussell@berkeley.edu

ABSTRACT:

ICTs have been drawn into the 'development' field as potential tools for poverty alleviation and economic and social development. There is not, however, a single accepted definition of 'development' in ICT for development (ICT4D) projects. The lack of a single definition has implications for the design, implementation, and evaluation of ICT4D initiatives. Our goal in this paper is to problematize 'development' in these projects. Based on our analysis of Indian rural kiosk initiatives, we argue that variations in institutional definitions of development can lead to different strategies for deployment and implementation of projects. We examine the different philosophies of development and project goals of three ICT4D kiosk initiatives, including projects initiated by a nonprofit organization (Datamation Foundation), a private business (n-Logue), and a state public-private partnership in Kerala (Akshaya). We emphasize the case of Kerala to highlight the challenges associated with implementing projects under broad definitions of 'development.' Through this analysis we conclude that depending on how development is conceptualized and incorporated into ICT4D strategies, there are important social and economic tradeoffs to consider in the achievements of project goals and outcomes. This is important for both policy makers and researchers to consider in their design and evaluation of ICT4D initiatives.

ACKNOWLEDGEMENTS:

The authors would like to thank Kentaro Toyama and an anonymous reviewer for their comments. This material is based upon work supported by the National Science Foundation under Grant No. 0326582 and Microsoft Research India.

INTRODUCTION:

Opportunities for using information and communication technologies (ICTs) for “development” or to “bridge the digital divide” have been promoted by groups such as the United Nations, the G8, NGOs, governments, the World Bank, and Multi-National Corporations (HP 2005; InfoDev 2002; InfoDev 2003; UNCTAD 2004). For example, in November 2005, at the United Nations World Summit on the Information Society, 174 countries adopted the Tunis Commitment, which is an agreement to build “a people-centered, inclusive and development-oriented Information Society” so that people can create, access, utilize, and share information and knowledge. This is based on the idea that ICTs can help people to achieve their full potential and to attain ‘development’ (WSIS 2005).

ICTs have been drawn into the ‘development’ field as potential tools for poverty alleviation, economic and social development in urban and rural areas of developing countries (Arunachalam 2002; Eggleston 2002; Keniston 2002; Prahalad 2004; WRI 2005). But how institutions implementing “ICT for development” (ICT4D) projects conceptualize ‘development’ varies. What does the ‘D’ in ICT4D projects mean ideologically and empirically for project outcomes? Development is a term that has not been problematized within the ICT4D space and although actors may assume a consensus on how ‘development’ is defined with ICTs, this paper demonstrates that this is not the case.

Varying conceptualizations of both what ‘development’ is and the way it is linked to ICT strategies have implications for how actors on the ground attempt to utilize ICTs to meet their project goals. If development refers to a certain level of economic production, then ICT4D project goals may be used to make domestic businesses more efficient and sustainable. If, however, development also includes social and political goals, then projects may involve using

these technologies to improve access to health care, to provide better educational opportunities, to increase citizen access to government services, and to improve basic individual access to communications facilities for the most marginalized groups. In this paper, we ask—how do different institutions varying conceptualizations of ‘development’ goals influence the process by which ICT4D projects are designed and implemented?

This research focuses on ICT rural kiosk deployments and examines these projects as development processes. The goal of the paper is to highlight different ideological and deployment strategies of ICT rural kiosk projects and their linkages to development goals. Rural kiosks are computer centers that typically have several computers, are owned and run through a variety of models and provide a range of services to users at lower cost than privately owned computers (WRI 2005:1). The most dominant model of kiosk implementation is based on a franchise model with local entrepreneur ownership. In this paper we highlight various approaches to rural kiosks.ⁱ

Based on our research, we argue that depending on how ‘development’ is defined by the institutions implementing kiosks, there can be variations in strategies for deployment and eventually development outcomes of the kiosk projects. We examine different philosophies of development and project goals of three ICT4D projects in India, including a nonprofit organization (Datamation Foundation), a private business (n-Logue), and a public-private partnership in Kerala (Akshaya). We place particular emphasis on the Akshaya project in Kerala to highlight the challenges of implementing kiosk projects under a broad definition of development, one that emphasizes both social and economic goals. We conclude that there are important social and economic tradeoffs to consider in the achievement of ‘development’ goals and outcomes depending on how development is conceptualized and incorporated into ICT4D

strategies. The tradeoffs between economic and social goals are an important consideration for both policy makers and researchers in their design and evaluation of ICT4D initiatives.

UNDERSTANDING ‘DEVELOPMENT’ AND ‘ICT4D’

The definition of ‘development’ (Escobar 1995; Ferguson 1994; Lal 1985; Mann 2003; Sachs 1992; Sen 1999) has been, and continues to be, widely debated. The most common indicator of development is income per person (Mann 2003: 67). Development in this sense is in terms of an economic standard and could be described more specifically as ‘economic development.’ The United Nations Millennium Development Goals (MDGs) utilize a comprehensive approach that incorporates poverty and hunger reduction, provision of primary education, gender equality, health issues, and environmental sustainability (UN 2005). These MDGs were adopted at the United Nations’ Millennium Summit in 2000 as part of the Millennium Declaration, which is a document signed by 189 countries with the goals to work towards sustainable development and eliminating poverty. From these goals it becomes evident that an expanded definition of development includes many social factors including low or no poverty, access to education, access to health care, egalitarianism, and access to a clean and safe environment (Ibid). This conceptualization of ‘social development’ is much broader than that of its economic counterpart. Economic and social factors, however, are not the only potential components of development and access to political freedom is also an important consideration (Sen, 1999: 5) Contrary to those who emphasize political, social or economic development as a prerequisite for the other, Sen argues that social and political freedoms are “among the constituent components of development (Ibid.)” Thus the broadest conceptualization of development includes economic, social and political development factors in considering whether

or not a given country or population is developed and what areas would be viable for development initiatives (see Table 1). These general debates on what development 'is' provide the context for consideration of how to use ICTs to pursue developmental goals. The debate about ICT's and development, however, is a complicated one. While ICTs are seen as potential tools for achieving the MDG's, this is merely one example of how these technologies have been drawn into the development field. Understanding how technology is embedded in social structures, global relations and relations of power are also various lenses by which to understand ICTs within the development context.

Also relevant to our analysis are critiques of the development discourse itself. Sachs (1992) and Esobar (1994) focus on development discourses and how they shape people's understandings of what they call 'underdevelopment.' These authors are part of the post-development literature that ranges from attempts at Foucauldian analysis of development discourse to reactions against modernity. This literature questions the assumptions underlying development discourse and attacks it as "self defeating." The discourse has been viewed as an imposition of a particular type of knowledge with the idea that this knowledge yields a certain power. Authors argued that the historical production of a discourse that created representations of how people come to see themselves as underdeveloped and in "poverty" (Escobar 1994: 21) fundamentally contradicted the original goals of development promoters. This emphasis on discourse is important for elucidating how particular understandings and knowledge can be produced and can have material affects. As we will see in the discussion of kiosk cases below, particular understandings of what development is and who should be the focus of development initiatives can have material effects, such as particular ICT project strategies. At the same time, this post-development literature has also been critiqued for being ahistoric, holding crude

conceptions of power, a mutual antipathy towards the state, and calling on the ‘local’ as the solution to power struggles (Hart 2001: 650-51). Understanding the various ways development has been portrayed, examined and critiqued is useful to this analysis of ICTs and development, because it highlights that these projects are not simply technical solutions but need to be considered in light of the prodigious scholarship on development, the many ways development has been conceptualized, and the ongoing debates involved.

The specific question of how ICTs may be useful in facilitating development objectives has received significant attention in the last two decades. The World Bank, governments and other institutions promote ICTs as a technological tool to be used to meet the Millennium Development Goals (MDGs). Although the World Bank debated in the 1990’s whether choosing ICTs drew resources from other development priorities, they now assert that ICTs should not be seen as tradeoffs, but as complementary to development goals (World Bank 2003: 7). Partnerships among private and public actors are being increasingly emphasized in the development space as tools for achieving broad developmental goals, such as in the case of ICTs. The Bank measures the success of using ICTs in terms of how much progress has been made towards MDGs. ICTs are thought to be useful in “eradicating poverty” by stimulating macroeconomic growth, making markets more efficient; improving social inclusion; and facilitating political involvement (World Bank 2003: 8). These goals are not mutually exclusive, but some institutions conceptualizing strategies for ICT4D emphasize particular goals over others. Furthermore, there is a debate as to whether ICTs should be used as part of a holistic and integrated development and growth strategy or as part of targeted approaches to poverty alleviation. On one side, there is the perspective that ICTs are just one means to serve information needs and a holistic and integrated approach is needed to understand the information

chain and determine areas for intervention, which requires a series of resources (Duncombe and Heeks, 2001: 2). On the other side is the notion that these overall type strategies rely on trickle down effects in poverty and interventions should instead be focused on the specific needs of local groups (Gerster and Zimmerman, 2003: 2). However, these ideas should not necessarily be seen as contradictory and there continues to be much debate and discussion on which approaches are more appropriate given the overall institutional goals of organizations or projects. Thus, it is important to consider particular institutional philosophies and their influence on the design and deployment strategies of ICTs because of the effects these strategies can have on the basic success of an implementation in terms of who benefits and the financial sustainability of projects.

We will now examine three ICT4D projects to highlight the differences in conceptualization of development and the implications for rural kiosk implementation and deployment. These projects were selected for their varying conceptualizations of ‘development’ goals. For the Datamation Foundation, ‘development’ is based largely in the social development characteristics outlined above, but their specific emphasis is on gender empowerment. The promotion of women through the use of ICTs is the key development objective of the Foundation. As a result, their kiosk initiative emphasizes operational characteristics and program content that are designed to support women’s development, even if this means minimal services for men and dependence on subsidies to continue the program. In contrast, the n-Logue kiosk program places explicit emphasis on promoting economic development in India’s rural areas. Kiosks are owned and operated by local entrepreneurs who aim to provide whatever services will make their kiosk sustainable in the local market. This model involves no subsidies and there is little or no attempt to ensure that particularly disadvantaged groups will have access to the

kiosks. The definition of ‘development’ utilized in the Akshaya project of Kerala brings together social and economic development goals. In attempting to achieve these goals the Kerala state government implemented an entrepreneur-based model, but they also subsidized e-literacy training to ensure that all citizens would have the skills needed to make use of the kiosks. In practice there have been challenges for the Kerala government and kiosk entrepreneurs to find a balance between these developmental goals. This difficulty highlights the importance of recognizing how the kind of ‘development’ evoked in a project can affect eventual project outcomes.

STRATEGIES FOR RURAL KIOSK IMPLEMENTATION

Datamation Foundation (NGO Model)

The Datamation Foundation was formed by the founder of Datamation Consultants Pvt. to promote gender rights and the use technology, and rural ICT kiosks in particular, to help and empower women. This project emphasizes one aspect of development as embodied in the MDGs, which is to promote gender equality and empower women. The foundation also strives to use technology in ways that promote broad social development and poverty alleviation, but the clear focus is on women’s issues.

One of the Datamation Foundation’s programs is the deployment of rural kiosks or Village Information Centers (VICs). The foundation owns the kiosks and employs young women to run the centers. The Foundation determines locations of the centers, based on analysis of the socio-economic and demographic factors. The Foundation tries to put the centers in areas where they will be able to help the most disadvantaged women. The young women chosen to run the centers are also selected based on factors that emphasize empowering the most disadvantaged groups. This reflects the fact that the goal is not to make the centers profitable, but to use the

resources of the foundation to provide services to the community. This emphasis on social, rather than economic, goals is an important characteristic of the centers that differentiates them from some other kiosk initiatives. There are currently about 35 kiosks and they do not plan to expand much beyond this number because they do not want to overextend the resources of the organization. Instead the goal is to focus on particular communities and to have a large impact in the few areas in which they are working.

The multipurpose centers incorporate access to computers and the Internet in addition to non-technical classes such as embroidery and sewing. The foundation has also developed a set of digital educational programs that women can access from computers at the centers. The programs include business development, such as learning how to make foods that can be sold in markets, and courses on women-specific issues such as reproduction and health. These programs are mainly available in Hindi and English. There are also illustrated images to help convey the information. A part of the reasoning for business development courses is to enable women to have an income separate from that of their husbands.

The operations of the centers also reflect the goal of the project to promote women. In at least some of those centers, particularly those in largely Muslim communities, only women are allowed to use the centers during the day. From 8AM to 4:30PM the center will be open for women only and then during the evening hours men will be allowed to use the center. The financial resources of customers are also taken into consideration. While there are charges for many of the services, there is a sliding scale for fees such that the poorest individuals can use the center for free, those just below the poverty line pay R50 per month, and those with more income pay more.

By placing an emphasis on women's development goals, the Datamation Foundation has made clear choices in implementation in order to achieve these goals. By limiting access to the centers during the day, the project hopes to overcome any intimidation or social barriers that would prevent women from coming in when men are present. In providing content that is specific to women's interests, the project ensures that there are reasons for women to visit and benefit from the centers. Finally, by charging fees on a sliding scale, the centers enable women without their own income to take advantage of these services. Many other kiosk projects do not offer similar women-friendly environments and thus Datamation Foundation attempts to meet some women's development goals.

N-logue (Business Model)

An Indian start-up called n-Logue Communications takes a private sector approach to ICT projects for development and created a for-profit business model to tap into the rural demand in India for connectivity. The Telecommunications and Computer Networking (TeNeT) Group of the Indian Institute of Technology in Chennai incubated N-Logue. N-Logue's business model fits into the Institute's strategy for developing and "disseminating innovative, affordable communication technologies to the rural poor of developing countries (Prahalad and Hammond, 2002:32). N-Logue's conceptualization of development is based on economic growth, increased income for entrepreneurs, and provision of services for the rural population. The institutional goals of n-Logue are commercially driven, focused on penetration. The selection of entrepreneurs and the services offered are targeted towards financial sustainability.

n-Logue uses a franchise-based business model that has three levels of interdependent networks. First, n-Logue develops and facilitates relationships among a range of organizations to enable and support the business of franchise owners. This includes hardware providers, NGOs,

content providers and government. Second, n-Logue works with a regional network of franchised Local Service Providers (LSP), who are usually, recognized business people or district governments. This is a partnership in which the LSP works simultaneously with n-Logue to set up nodes at which kiosk operators can connect. Finally, at the crux of n-Logue's business, the LSP recruits local entrepreneurs to establish village-level kiosk franchises. These entrepreneurs are individuals who can afford to take a loan to begin a business, are educated at least to 12th standard, and demonstrate the ability and motivation to run a center. The company sells "kiosk packages" to entrepreneurs through the LSP, which consist of a computer, printer and backup battery. N-Logue provides kiosk owners with training, support, and general technical assistance. However, local entrepreneurs must take responsibility for developing additional product and service offerings as well as marketing strategies. Typically the kiosks provide Internet and telephone access to local populations or villages, in addition to a variety of government and private sector services. These services vary depending on the kiosk owner, but can include computer courses, net-based services, and employment. N-Logue targets the general rural population, but with emphasis on those who can pay for services, not the poorest groups in the community. There are currently n-Logue operations in Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh, and Gujarat, and the company continues to expand (n-Logue 2006).

n-Logue emphasizes economic development and the creation of jobs in rural communities. As a result, the entrepreneurship model serves to develop a new source of employment in these villages. However, this employment is only available to certain groups of people because of requirements for the characteristics of entrepreneurs. In addition, services are developed within the centers to drive employment, such as local business process outsourcing

(BPO) opportunities for additional people within the community. The fee-for-service model is also intended to support financial sustainability of the kiosks and thereby a viable business for the entrepreneur.

Akshaya (Public/Private Partner Model)

The final project we examine is Akshaya, which was initiated by a state actor, the Government of Kerala, as a partnership in collaboration with private entrepreneurs. In 2002, the state initiated “Akshaya,” a rural kiosk project, in order to ‘bridge the digital divide’ through increased communications in rural areas and to provide “e-governance” services such as paying bills remotely and accessing official documentation, such as birth and death certificates via computer kiosks or telecenters for households (www.akshaya.net). The goal was to address issues of access to technologies, skills and content as well as penetration of the technologies (IITB 2005: III. 2; Kuriyan 2006: 1; Pal 2005:3). In terms of ‘development’, the Kerala State Information Technology Mission has social development goals of social inclusion, universal access, education for the ‘masses’ as well as economic growth through enterprise development and employment.

The state took an active role in initiating the program and at the same time tried to establish a balance so that local entrepreneurs could own and run the telecenters. The project aims to provide accessibility to ICTs in rural areas and the entrepreneurs established 630 Akshaya centers in the Malappuram District of Kerala, which are supposed to serve approximately 630,000 customers. Originating from a proposal of the local government for 100% district wide e-literacy training, the Department of Information Technology in the Government of Kerala took a private-public partnership model with the main goal of promoting e-governance throughout the state. The state adopted a strategy of computerization of

administrative tasks which could be highly visible and implementable with citizen interface projects. This program was initiated in this District with the idea that it would be a pilot project that the government would eventually “roll out” to the 13 other Districts of the state.

In order to achieve both its social and economics development goals, the Akshaya project incorporates multiple activities to build citizen awareness and develop services to meet local needs. First, the Kerala IT mission conducted a research phase in which they initiated surveys at a local level and included local government input before launching the project in the Malappuram District of Kerala. This highlights the aspect of doing a full assessment of local needs and understanding local conditions and implementing a strategy that is historically and geographically specific. Second, during this period they created a development strategy that incorporated local needs and attention to marginalized groups and included a plan for economic and social sustainability of the project. They decided to take a model by which entrepreneurs owned and operated the kiosks. However, the government also decided to help minimize entrepreneur risks in the venture by supporting the e-literacy period in which they essentially paid for a large proportion of the loans the entrepreneurs took. Third, rather than just marketing the project to the local communities, the state took an explicit strategy to actually invest in the market by training individual households in e-literacy skills. The project started with an e-literacy phase, subsidized by the state, with the goal of training one member from each household in a basic e-literacy course so that households could become familiar with and develop a set of skills with computers. The entrepreneurs selected the “decision maker” of each household to attend the computer-training program. The course was highly subsidized by the government (who paid the entrepreneur for each household trained) and the individual member of the household had to pay a nominal fee. Many of the people who attended the training were

women due to the large number of men working abroad in this district. Fourth, the e-literacy training created a large-scale awareness of the project, computers more generally, and an understanding among the local people of the planned project. Although not everyone in the community who participated in the e-literacy training project now use the centers, this broad awareness is important to: future use of computers, the roll out of the project to new districts and general awareness of the benefits of computers for the rural population.

The state also selected entrepreneurs based on a variety of criteria, including education, business skills, computer skills and some social considerations to women. The state trained entrepreneurs throughout every phase of the project. Thus, training and capacity building were of paramount importance throughout the project. During the second phase of the project, the entrepreneurs, who owned the centers, were supposed to provide local people with services including access to government services through e-governance, computer education courses, communications, and web browsing (IIITB 2005: III. 2; Kuriyan 2006: 2; Pal 2005:3). The entrepreneurs are supposed to maintain the sustainability of the kiosks and provision of services by charging customers for their services. The project is now being rolled out to 7 other districts in the state. The process of expansion is headed by the government, which selects and trains entrepreneurs, initiates the e-literacy phase and provides the connectivity infrastructure (Akshaya website). All of these activities are intended to support the social development of the community and the economic viability of the centers themselves (see Table 2).

DISCUSSION

These rural kiosk projects drew on different conceptions of development and are implemented with different strategies, ownership models, and project goals. Studies indicate there are political and social challenges to the implementation of kiosk projects in general and

maintaining financial sustainability can be difficult (Kuriyan 2006:10; Toyama, 2004:3). This paper does not advocate a particular definition of development, ownership model or deployment strategy. We recognize that the implementation and outcomes of these projects will vary and also depend on the political economy and histories of development within individual states in which projects are implemented, overall institutional goals, and existing levels of inequality, education and social differentiation. However, we argue that it is important to problematize ‘development’ in these projects and explicitly recognize that different goals of institutions and conceptualizations of development will determine the outcomes of ICT4D projects. In particular these cases highlight that not only do different conceptions of development affect the characteristics of project outcomes, but there are also often tradeoffs that are necessary in order to accomplish one kind of development goal instead of another.

Specifically in these cases we see that particular development goals imply tradeoffs in implementation that determine two key project outcomes: 1) who benefits from ICT4D projects and 2) the commercial viability of kiosks. For example, as we discussed, the Datamation Foundation targets the poorest women of the community in their rural kiosk initiatives. This means it is prioritizing social development and access for the poorest part of the female population to the exclusion of men. Because the Datamation Foundation provides donor funding for the kiosks and subsidizes a sliding scale for kiosk use fees, marginalized groups have increased ability to utilize the centers. At the same time, this means that the centers are not commercially viable in the short-run, which is a common goal of other projects that emphasize economic development through rural enterprise with local ownership of kiosks by entrepreneurs. n-Logue provides an example of this latter goal, as a project that is focused on economic development through commercial viability of kiosks and emphasis on a business model. With

this kind of focus, it is more likely that the poorest groups of the population will not benefit from the project because the kiosks serve only the population who can pay for services. But in doing so, there is expected to be a greater chance that these kiosks will be able to achieve financial sustainability without subsidies. In the final case, the strategy of Akshaya is to try to achieve both benefits for the rural population, including the poor, and illiterate groups through the e-literacy process, as well as commercial viability of kiosks. The project has dual goals of social development through increased access to computers for rural people as well as financial viability of the kiosks based on market principles. Research suggests that there is a tension inherent between having these two goals at a macro level (within the state) and a micro level (with entrepreneurs and potential consumers). There are specific trade-offs that result if the state or entrepreneurs emphasize one of these goals over the other (Kuriyan 2006: 10). For example, if the state overemphasizes the financial sustainability goals entrepreneurs may need to cater to the population who can generate profits, and are willing to pay for high priced services rather than the 'masses' who may not be able to pay. On the other hand, if the state overemphasizes the social development aspect of the project and entrepreneurs cater to the development needs of the poor, then the state may have to fund these entrepreneurs on an ongoing basis. Additionally, tensions associated with consumers' perceptions of the state and entrepreneurs also are an important consideration. The perceptions associated with state-led development programs, that of helping poor people with free and low quality services, can be detrimental to the financial sustainability of the Akshaya kiosks. However, for social development goals, the Akshaya association with the state can be beneficial by creating awareness among rural people that kiosks are places where they can receive useful and low cost computer training. This makes it difficult to run a financially self-sustaining ICT kiosk project that also meets social development goals

(Kuriyan 2006:10). Thus although partnerships are increasingly prescribed as a solution to development issues, the Akshaya case shows the difficulties of achieving broad developmental goals with differing institutional aims of partners.

CONCLUSION

The goal of this article was to problematize and analyze ‘development’ in the implementation of ICT4D initiatives. In each of the cases we discussed, there is a clear definition of ‘development’ that affects the way these technology access projects are designed and implemented. Each of the resulting deployment strategies holds lessons for how varying characteristics of a telecenter initiative can affect the ability of the initiative to meet its specific developmental goals. These development goals are not mutually exclusive, but it is important to recognize that how development is conceptualized will have concrete effects for beneficiaries and financial viability of rural kiosks.

Important policy and research agendas emerge from this discussion. In terms of research, there is an important empirical question to be addressed: can there be a common set of evaluation criteria for rural kiosk projects given these varying definitions of development? If researchers make an assumption that a single evaluation model can be applied to projects with diverse goals, then this could limit the relevance of the analysis. As we have seen in these cases, emphasis solely on economic sustainability for evaluation criteria would limit recognition of the social development goals being achieved by the Datamation Foundation’s kiosks. Alternatively, a focus purely on access for the most disadvantaged classes might elide successes in local economic growth driven by an entrepreneur.

Similarly, researchers can also draw on this analysis to improve current efforts to understand the outcomes of ICT4D initiative. By problematizing development and interrogating

at an empirical level how the diverse understandings of this term have practical implications for project implementation, analysts can better evaluate the causes of particular outcomes within and across projects.

For policy makers and practitioners, the analysis presented here shows that it is vital to be explicit about the development goals of particular ICT4B projects. These initiatives must be evaluated based on these terms and with clear recognition of the trade-offs embedded in these choices. In doing so, leaders of projects will be able to communicate better within project teams and with external parties about both the logic of project implementation strategies and the relevance of project outcomes.

There is no single model of development for rural kiosks. This article emphasizes that the imposition of one understanding of development by researchers or practitioners can lead to a lack of critical understanding for the different types of developmental impacts (whether they be social, economic, political) these projects can achieve. For ICTs to have the positive effects on development that so many people desire, it is necessary to improve our comprehension of these goals themselves, and to implement and evaluate projects within this more nuanced understanding.

Figures:

Table 1. Perspectives on Development

Economic	Social	Political
Medium to High per capita income, economic growth	Low poverty, universal education, access to health care and disease reduction, gender equality, environmental sustainability	Guarantees for political and civil liberties, transparency guarantees, protective security

Table 2.: Rural Kiosk Project Strategies and Concepts of Development

Kiosk Project	Datamation Foundation	n-Logue	Akshaya
Conceptualization of Development	MDGs broadly, with emphasis on equality for women and women's empowerment	Economic growth through increased income for entrepreneurs and employment services for rural population	Universal access to ICTs, education for 'masses', economic growth through enterprise development, employment; penetration of technology; get people to use government services
Model of ownership	Foundation owned	Private-business owned	Public-private partnership
Target audience	Women, particularly from lower classes	Rural population – those who can pay for services	Rural population-training for all; those who can pay for services
Services offered	Computer courses, business skills, health education, web browsing, embroidery and sewing	Computer courses, net-based services, and employment	e-governance, computer education courses, communications, and web browsing
Payment for services	Yes, on sliding scale based on income and free for poorest customers	Yes	Yes for services; e-literacy training subsidized for households
Operator	Selection by the	Local Service	Selection by

selection	Foundation based on socio-economic and demographic considerations, with emphasis on helping the most disadvantaged women	Providers recruit entrepreneurs with at least 12 th standard education and perceived ability and motivation to run a kiosk	government based on education, business skills, computer skills and some social considerations to women
Financial Sustainability	Based on Foundation and fees for use	Based on entrepreneur	Based on entrepreneur
Model of expansion	No expansion planned	n-Logue selects new districts and recruits LSPs	Government selects new districts;

Bibliography:

- Arunachalam, S. 2002. "Reaching the unreached: how can we use information and communication technologies to empower the rural poor in the developing world through enhanced access to relevant information?" *Journal of Information Science* 28:513-522.
- Duncombe and Heeks, 2001. Information and Communication Technologies and Small Enterprise Development: Lessons from Botswana. Institute for Development Policy and Management . January 2001.
- Eggleston, K., Jensen, R., Zeckhauser, R. 2002. "Information and Communication Technologies, Markets, and Economic Development." Center for International Development, Harvard University, Cambridge.
- Escobar, Arturo. 1994. *Encountering Development : The Making and Unmaking of the Third World*. Princeton: Princeton University Press.
- Ferguson, James. 1994. *The Anti-Politics Machine: Development, Depoliticization and Bureaucratic Power in Lesotho*. Minneapolis: Regents of University of Minnesota.
- Gerster, R. and Zimmerman, S. 2003. "ICTs for Poverty Reduction." *Information for Development Online*. I4D. July-August.
- Hart, Gillian. 2001. "Development Critiques in the 1990's: Culs de Sac and Promising Paths." *Progress in Human Geography* 25:649-658
- HP. 2005. "Global Citizenship Report." Hewlett Packard.
- IITB. 2005. "Case of Akshaya Information and Communication Technologies for Development. A Comparative Analysis of Impacts and Costs from India." IITB, Kiran, GR, Bangalore.
- InfoDev. 2002. "Monitoring the Digital Divide." World Bank.
- . 2003. "ICTs, Poverty, & Development- Learning from Experience." World Bank.
- Keniston, K. 2002. "Grassroots ICT Projects in India: Some Preliminary Hypotheses." *ASCI Journal of Management* 31.
- Kuriyan, R; Toyama, K, Ray, I. 2006. "Integrating Social Development and Financial Sustainability: The Social and Political Challenges of Kiosks." *Proceedings of International Conference on Information and Communications Technologies and Development: ICTD2006*.
- Lal, D. 1985. "The Misconceptions of Development Economics." *Finance and Development*:10-13.

- Mann, C. 2003. "Information Technologies and International Development: Conceptual Clarity in the Search for Commonality and Diversity." *Information Technologies and International Development* 1:67-79.
- Markle, Accenture UNDP. 2001. "Creating a Development Dynamic: Final Report of the Digital Opportunity Initiative." Accenture, Markle Foundation, and the United Nations Development Program.
- n-Logue. www.n-logue.com Accessed June 18, 2006
- Pal, J. , Nedeveschi, S., Patra, R., Brewer, E. 2005. "Multi-Disciplinary Approach to Shared Access Village Computing Initiatives: The Case of Akshaya." *Global Challenges of eDevelopment 2005*.
- Prahalad, CK. 2004. *The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits*. Delhi: Wharton School Publishing.
- Prahalad, CK and Allen Hammond. 2002 "What Works: Serving the poor profitably," Markle Foundation and World Resources Institute
www.digitaldividend.org/pdf/serving_profitably.pdf
- Sachs, W. 1992. "Introduction." in *The Development Dictionary: A Guide to Knowledge as Power*, edited by W. Sachs. Princeton: Princeton University Press.
- Sen, A. 1999. *Development as Freedom*. Oxford: Oxford University Press.
- Toyama, K, Kiri, K; Maithreyi L, Nileshtar, A,; Vedashree, R; MacGregor, R. 2004. "Rural Kiosks in India." Microsoft Research Technical Report.
- UN. 2005. "Millennium Development Goals Report." United Nations, New York.
- UNCTAD. 2004. "eCommerce and development Report." UNCTAD.
- WorldBank. 2003. "ICT and MDGs: A World Bank Group Perspective." World Bank: Global ICT Department, Washington DC.
- WRI. 2005. "Lessons from the Field: ICTs in Telecenters. Digital Dividend." Digital Dividend.
- WSIS. 2005. "Tunis Commitment." <http://www.itu.int/wsis/docs2/tunis/off/7.html>.

ⁱ This analysis and discussion is based primarily on interviews conducted by the authors, in addition to review of primary and secondary literature on the three kiosk initiatives. More than 60 open-ended interviews were conducted with actors from 11 kiosk projects throughout India (Projects included: Dhan Foundation, nlogue, Drishtee, Akshaya, Bhoomi, Common Service Centers, Rajiv Internet Villages, SARI, TARAhaat, MS Swaminathan Research Foundation, Datamation Foundation). This included interviews with both governmental and nongovernmental actors and project staff.